REMARKS

Drawings

In response to the Drawing Objection, applicants submit herewith a corrected Figure 3 labeled as "Replacement Sheet." Withdrawal of the objection is respectfully requested.

Amendments

Claims 1-14 are amended to be directed to a method of generating an electrooptical effect. Support for this amendment is provided throughout applicants' disclosure. See, e.g., page 1, lines 10-20. Also, all of the claims are amended to delete unnecessary language and to use language in accordance with conventional U.S. practice.

Additionally, claim 15 is amended to incorporate the recitation of original claim 17, which is now cancelled. Claim 16 is amended to be consistent with amended claim 15. Claims 22, 24, 25, and 27 are amended to recite that the claimed device is a zenithal bistable nematic liquid crystal device.

New claims 29 and 30 recite that component (δ) comprises at least one compound of formula I and component (α) comprises at least one compound of formula III. See, e.g., original claim 17.

New claims 31-33 recite that the liquid crystal composition has a clearing point T_{NI} of at least 90 °C. See, e.g., Examples 1-15 and 17-21.

Rejection under 35 USC 112, second paragraph

Claims 1-14 are rejected as allegedly being indefinite because there are recited as "use" claims. Claims 1-14 are now amended to be method claims. Withdrawal of the rejection is respectfully requested.

It is noted that at page 3 of the Office Action it is asserted that claims 22-27 recite a feature that does not have proper antecedent basis, although it is not stated that these claims are rejected under any particular statute. In any event, claims 22, 24, 25, and 27 are amended to recite that the claimed device is a zenithal bistable nematic liquid crystal device.

Rejection under 35 USC 101

Claims 1-14 are rejected as being "use" claims. Claims 1-14 are now amended to be method claims. Withdrawal of the rejection is respectfully requested.

Obviousness-type Double Patenting Rejection

Claims 15-28 are rejected on grounds of obviousness-type double patenting in view of claim 1 of Serial No. 10/538,788. Filed herewith is a terminal disclaimer with respect to Serial No. 10/538,788. Submission of this terminal disclaimer is not to be construed as acquiescence to any ground of rejection. Withdrawal of the rejection is respectfully requested.

Rejection under 35 USC 102(b) in view of Junge et al.

Claims 15-18 are rejected as allegedly being anticipated in view of Junge et al. (US 5,391,319). This rejection is respectfully traversed.

In the rejection, reference is made to component C of example 2 of Junge et al. This mixture contains, among other things, 6.0 % ME2N, 6.0 % ME3N, 17.0 % ME6O.5, 5.0 % HP-3N.F, 5.0 % HP-5N.F, and 10.0 % BCH-52. The examiner argues that the first five of these compounds correspond to applicants' component (α) and the last compound, BCH-52, corresponds to applicants' component (δ).

However, the compound ME6O.5 of US '319 is not a polar compound. In this compound, the left wing group is $C_6H_{13}O$-, the right wing group is C_5H_{11}-, and L^1 is H. This compound has a dielectric anisotropy $\Delta\varepsilon$ of close to zero. Without ME6O.5, the compounds ME2N, ME3N, 5HP-3N.F, and HP-5N.F make up 22% of Component C. In the resultant compositions containing Components A and C, these compounds would make up even less of the overall composition.

Similarly, the compounds HP-3N.F and HP-5N.F have dielectric anisotropies of less than 40. Without these two compounds, ME2N and ME3N make up 12% of Component C. In the resultant compositions containing Components A and C, these two compounds would make up even less of the overall composition.

Additionally, component C does not contain an alkenyl/cyano compound in accordance with applicants' formula III.

In view of the above remarks, it is respectfully submitted that of Junge et al. fails to anticipate applicants' claimed invention. Withdrawal of the rejection is respectfully requested.

Rejection under 35 USC 102(b) in view of Jacob et al.

Claims 15-18 are rejected as allegedly being anticipated in view of Jacob et al. (US 20020086120). This rejection is respectfully traversed.

In the rejection, reference is made to mixture M14 in Table 16 of Jacob et al. This mixture contains compounds of the formulae ME, PYP, HP, BCH, CCG-V-F, and CC-n-V. See Tables A and B. Mixture M14 does not contain an alkenyl/cyano compound in accordance with applicants' formula III.

In view of the above remarks, it is respectfully submitted that of Jacob et al. fails to anticipate applicants' claimed invention. Withdrawal of the rejection is respectfully requested.

Rejection under 35 USC 103(a) in view of Jones et al. and Jacob et al.

Claims 19-28 are rejected as allegedly being obvious in view of Jones et al. (WO 01/40853) in combination with Jacob et al. (US 20020086120). This rejection is respectfully traversed.

Jones et al. (WO 01/40853) disclose a bistable nematic liquid crystal device comprising a layer of nematic liquid crystal material between two cell walls that carry electrodes and an alignment layer having both primary and secondary modulation, the device being switchable between a light transmissive state and a light non-transmissive state. See page 5, lines 12-27.

However, Jones et al. provide little details about the liquid crystal material used in the device. At page 8, lines 14-18, Jones et al. disclose that the birefringence Δn should be as high as possible and is typically between 0.18 and 0.25 at optical wavelengths. In Example 1, the liquid crystal material is identified as the commercial nematic liquid crystal MLC 6602, which is said to have a positive dielectric anisotropy and a high Δn. In Example 3, the liquid crystal material is identified as E7. Also, in Example 6, the liquid crystal material is identified as MLC 6204.

As such, Jones et al. provide little in the way of suggestion as to what types of liquid crystal materials are to be used in the device. Example 1 uses a material having positive dielectric anisotropy, but there is no suggestion that it is desirable or beneficial to use materials with high positive dielectric anisotropy. Further, the material used in example 1 is said to have a high Δn. In the context of the Jones et al. disclosure, a high Δn would mean in the upper part of the range of 0.18 - 0.25.

Jacob et al. (US '120) disclose an electro-optical liquid crystal display device, particularly an STN display device. Jacob et al. do not mention a bistable nematic liquid crystal device as disclosed by Jones et al.

At paragraphs [0021]-[0041], Jacob et al. disclose preferred liquid crystal media for use in their device. The media contain, among other things, one or more highly dielectric positive compounds of their formula (I), and/or one or more dielectrically positive compounds of their formula (II), and/or (preferably and) one or more dielectrically neutral compounds of their formula (III). Also, at paragraph [0081] it is stated that the media preferably comprise from 40% to 75% of one or more, preferably more, preferably highly dielectrically positive compound(s) selected from formulae I and II.

In paragraph [0127], Jacob et al. defines some terms regarding positive dielectric compounds. Thus, the term "dielectrically very highly positive compounds" is defined as compounds having a $\Delta\varepsilon$ of >20, "dielectrically highly positive compounds" is defined as compounds having a $\Delta\varepsilon$ in the range from less than 20 to 10, and "dielectrically slightly positive compounds" is defined as compounds having a $\Delta\varepsilon$ in the range from less than 10 to . >1.5.

In the Examples of Jacob et al. the $\Delta\varepsilon$ values are listed for some mixtures. See examples 1, 11, 12, 18 and 20. Examples 1, 11, and 12 have $\Delta\varepsilon$ values of greater than 50. Examples 18 and 20 have $\Delta\varepsilon$ values of 29.3 and 30.1. Also, the mixtures in the examples exhibit Δn values that are relatively low, i.e., within the range of 0.1292 to 0.1826.

Overall, the rejection fails to suggest any reason or motivation why one of ordinary skill in the art would look to the disclosure of Jacob et al. when looking to modify a bistable nematic liquid crystal device such as disclosed by Jones et al. The disclosure of Jacob et al. does not suggest that the compositions described therein are suitable for use bistable nematic liquid crystal devices. If fact, the disclosure of Jacob et al. does not mention bistable nematic

liquid crystal devices at all.

Similarly, nether disclosure suggests the use of highly dielectrically positive materials, such as described by Jacob et al., in bistable nematic liquid crystal devices. Additionally, the desire stated by Jones et al. to use liquid crystal materials having Δn values as high as possible would suggest away from the use of the materials described by Jacob et al., which have relatively low Δn values.

In view of the above remarks, it is respectfully submitted that Jones et al., taken alone or in combination with Jacob et al., fails to render obvious applicants' claimed invention. Withdrawal of the rejection is respectfully requested.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,

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